UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/895,264	07/02/2001	Kiyoshi Kamitani	Q64664	7751

7590 05/19/2003

SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC
Suite 800
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037-3213

EXAMINER
FLETCHER III, WILLIAM P

ART UNIT	PAPER NUMBER
1762	13

DATE MAILED: 05/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/895,264	KAMITANI, KIYOSHI	
	Examiner	Art Unit	
	William P. Fletcher III	1762	

-- The MAILING DATE of this communication app ars on th cover she t with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 April 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5,6,9,12-14,17-22,24 and 25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5,6,9,12-14,17-22,24 and 25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 July 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). ____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: definitions of perfect colloidal sol'n

Detailed Office Action

I. Response to RCE

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 09 April 2003 (paper no. 9) has been entered.

II. Response to Amendment

Applicant's amendment in paper no. 9 amended claims 1, 12, 13, 18, 19, 22, 24, and 25, and cancelled claim 23. To clarify the record at this point in the prosecution, claims 1 - 3, 5, 6, 9, 12 - 14, and 17 - 22, 24, and 25 are pending, of which claims 1 and 12 are independent.

III. Response to Arguments

The examiner fully considered applicant's arguments in paper no. 9. Applicant cited those portions of the originally-filed application supporting the limitations in claims 12, 13, 18 - 22, 24, and 25. Accordingly, the examiner withdraws the rejections of these claims under 35

U.S.C. § 112, 1st Paragraph, below. In view of applicant's amendment in paper no. 9, the examiner withdraws the rejections under 35 U.S.C. § 112, 2nd Paragraph set-forth in paper no. 8. Applicant's arguments with respect to the art rejection, set-forth in paper no. 8, are moot in view of the new grounds of rejection set-forth below. Lastly, the examiner withdraws the indication of allowable subject matter set-forth in paper no. 8 in favor of the new grounds of rejection for claims 12, 13, 18 - 22, 24, and 25 below.

IV. Rejections under 35 U.S.C. § 112, 1st Paragraph

In view of applicant's arguments, the rejections under this heading in paper no. 8 are withdrawn.

V. Rejections under 35 U.S.C. § 112, 2nd Paragraph

In view of applicant's amendment, the rejections under this heading in paper no. 8 are withdrawn.

The following is a quotation of the second paragraph of 35 U.S.C. § 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. **Claims 17 and 25** are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 17 and 25 recite the limitation "the cooling step." There is insufficient antecedent basis for this limitation in these claims.

VI. Rejections under 35 U.S.C. § 103

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. **Claims 1 - 3, 5, 6, and 9** are rejected under 35 U.S.C. § 103(a) as being unpatentable over Ogawa et al. (US 5,077,912; hereinafter "Ogawa") in view of Kojima et al. (US 5,380,612; hereinafter "Kojima") and Strobush et al. (US 5,881,476; hereinafter "Strobush").

With respect to claim 1, Ogawa teaches a process for drying a photosensitive coating that has been coated on a conveyed support [c. 1, ll. 6 - 10 and Fig. 1]. The photosensitive coating composition is prepared by dissolving components of the solution in an organic solvent [c. 1, ll. 16 - 19 and c. 2, ll. 17 - 24]. The coating composition is then coated onto the support [c. 1, ll. 12

- 16 and Examples]. Ogawa teaches that the coating is dried by first hot-air drying the coating so that the coating is set-to-touch and then further drying the coating, downstream, by heating roll drying [cc. 1 - 2 and Examples].

Ogawa teaches neither that the second heating means does not contact the support or the photosensitive coated layer (i.e., is a non-contact heating means) nor that a condition of heating of the second heating means is changed while the support is being conveyed.

As noted above, Ogawa teaches that the second heating means is a heated roller. Kojima teaches the equivalence of a heated roller and various non-contact heating means (such as IR heaters, UV heaters, panel heaters, and hot air heaters) for heating a dried, photosensitive coating on a support [c. 10, ll. 55 - 58].

Further, Strobush teaches drying photosensitive coated articles by a hot-air drying means having multiple drying sub-zones [cc. 9 - 17]. The temperature, velocity, and pressure of the drying gas may be independently controlled in each of the sub-zones to eliminate mottle, a coating defect commonly associated with conventional hot-air drying processes [cc. 9 - 17].

One of ordinary skill in the art, taking the teachings of these references as a whole, would have been motivated to modify the process of Ogawa so as to substitute, as the second drying means, the hot-air drying means of Strobush, utilizing the independently-controlled drying sub-zones to ensure a high-quality coating. One of ordinary skill in the art would have been motivated to do so by the suggestion of Kojima that a hot-air drying means may be successfully substituted for a heater roller, and teaching of Strobush that such a hot-air drying means eliminates certain coating defects.

The examiner notes that Ogawa does not explicitly refer to the coated support as a lithographic printing plate. It is the examiner's position that this is merely a statement of intended use of the product produces according to the process claimed. Since the combination of references presented above teaches all of applicant's claimed process steps, and unless some critical step has not been recited, it is the examiner's position that the coated support of Ogawa is capable of use as a lithographic printing plate.

With respect to claim 2, Ogawa teaches that the hot air is supplied at a temperature lower than 150° C [c. 2, ll. 25 - 27]. This range overlaps that of "90° C or more" claimed by applicant. In the case where the claimed ranges overlap or lie inside ranges disclosed by the prior art, a *prima facie* case of obviousness exists [see MPEP § 2144.05(I)].

With respect to claim 3, Ogawa teaches that the coating material is set-to-touch, meaning that it has a viscosity of 10^8 to 10^{10} poise and does not adhere to a finger [c. 2, ll. 4 - 10]. Ogawa does not specifically teach the amount of organic solvent remaining in the coating layer after leaving the first drying means. The amount of remaining solvent is a result-effective variable. If the amount of organic solvent remaining is too great, the coating material will not be dry/set-to-touch. Absent clear and convincing showing of unexpected results demonstrating the criticality of the claimed amount of residual solvent, it would have been obvious to one of ordinary skill in the art to determine the amount of solvent remaining in the coating layer after the hot air drying process by routine experimentation, thereby limiting the amount of solvent remaining so that the coating layer is set/dry-to-touch.

With respect to claim 5, Strobush teaches that the hot-air drying means may be replaced or augmented by the use of IR heat [c. 12, ll. 14 - 25]. It is the examiner's position that, absent evidence to the contrary, IR heat reads on "radiated heat." Consequently, it would have been further obvious to one of ordinary skill in the art to replace or augment the second, hot-air drying means of Strobush with IR heat. One of ordinary skill would have been motivated by the desire and expectation of the similar or improved results suggested by Strobush.

With respect to claim 6, none of the cited references teach utilizing an induction heater as the second heating means. The heating means for applicant's claimed process does not appear to be critical. It is commonly known to utilize induction heaters in heating processes. Consequently, it would have been obvious to one of ordinary skill in the art to utilize an induction heater to heat the coating in view of the knowledge that induction heaters are useful in heating processes.

With respect to claim 9, Strobush teaches that drying of the photosensitive coating depends upon the specific nature and properties of the coating solution [c. 12, l. 26 - c. 17, l. 35]. Further, Strobush teaches, parameters of the drying process are selected commensurate with the specific coating solution so as to achieve the most efficient drying possible, specifically the heat transfer rate to the coating [c. 12, l. 26 - c. 17, l. 35]. The heat transfer rate is directly related to the temperature to which the coating is heated [$h\Delta T$; c. 12]. Consequently, Strobush clearly teaches controlling the condition of heating of the heating means so as to set the temperature to a

predetermined value based on the type of photosensitive layer. Additionally, differences in temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such temperature is critical [see MPEP § 2144.05(II)(A)].

3. **Claim 14** is rejected under 35 U.S.C. § 103(a) as being unpatentable over Ogawa et al. (US 5,077,912; hereinafter "Ogawa") in view of Kojima et al. (US 5,380,612; hereinafter "Kojima") and Strobush et al. (US 5,881,476; hereinafter "Strobush"), as applied to claim 1 above, in further view of Glover et al. (US 5,323,546; hereinafter "Glover").

The combined teaching of Ogawa, Kojima, and Strobush is detailed above. As noted in the rejection of claim 5, Strobush teaches that the hot-air drying means may be replaced or augmented by the use of IR heat [c. 12, ll. 14 - 25]. Strobush does not explicitly teach the use of mid- or far-infrared radiation, but it is the examiner's position that selection of appropriate IR wavelengths would have been obvious to one of ordinary skill in the art in order to achieve the desired degree and efficiency of drying.

None of the cited references teach that both the photosensitive layer and the support are heated.

Glover teaches non-contact drying of a support coated with a photosensitive layer in which the coated support is heated from one or both sides (i.e. top and bottom) by IR radiation [c. 3, ll. 9 - 40].

It would have been obvious to one of ordinary skill in the art to modify the process of Ogawa, Kojima, and Strobush so as to dry the photosensitive layer utilizing IR radiation from

both sides. One of ordinary skill in the art would have been motivated to do so by the desire and expectation of the similar or improved results suggested by both Strobush and Glover: that the photosensitive coating is cured.

4. **Claim 17** is rejected under 35 U.S.C. § is rejected under 35 U.S.C. § 103(a) as being unpatentable over Ogawa et al. (US 5,077,912; hereinafter "Ogawa") in view of Kojima et al. (US 5,380,612; hereinafter "Kojima") and Strobush et al. (US 5,881,476; hereinafter "Strobush"), as applied to claim 1 above, in further view of Gandini et al. (US 6,270,938; hereinafter "Gandini").

The combined teaching of Ogawa, Kojima, and Strobush is detailed above. None of these references teach including an overcoat layer on the photosensitive coating. However, Gandini teaches that the additional application of an overcoat layer is advantageous [c. 10, ll. 44 - 47].

It would have been obvious to one of ordinary skill in the art, in the absence of a teaching by Ogawa, Kojima, or Strobush as to further treating the coated support after the drying process, to look to prior art for additional treatments of the coated support and use the teachings of Gandini that an additional application of an overcoat is advantageous.

5. **Claims 12, 13, 18 - 22, and 24** are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kojima et al. (US 5,380,612; hereinafter "Kojima") in view of Mizuno (US 5,058,500) and Glover et al. (US 5,323,546; hereinafter "Glover").

Kojima teaches a process for manufacturing a planographic (i.e., lithographic) printing plate in which a support plate is coated with a photosensitive solution containing an organic solvent, the photosensitive solution is dried, and the dried, coated plate is further heated by a non-contact means [abstract; c. 9, ll. 1 - 10; and c. 10, ll. 34 - 68].

The examiner notes that the post exposure heating, described at c. 10, ll. 34 - 68, occurs after imaging and developing of the plate. Nevertheless, the claim language "...the method comprising..." is open to any number of steps between the first and second heating. Consequently, the post exposure heating reads on a second heating step.

The examiner also notes that Kojima appears to refer to the photosensitive coating liquid as both a "dispersion" and a "solution" [c. 8, ll. 34 - 45]. In reviewing applicant's specification, the examiner has found no evidence that applicant's definition of a photosensitive solution excludes a dispersion (i.e., that applicant's photosensitive solution is a "true solution" as opposed to a "colloidal solution"). The examiner has attached definitions of both true and colloidal solutions from *Hawley's Condensed Chemical Dictionary*.[1] Given the unclear division between the meanings of these terms, and absent evidence to the contrary, it is the examiner's position that the photosensitive coating liquid of Kojima reads on a solution.

Kojima describes a discrete support plate (as opposed to a web or running-length support) that is kept traveling in a preferred continuous automatic processing [c. 7, ll. 25 - 43 and c. 10, ll. 59 - 68]. Kojima does not explicitly describe a plurality of supports having differing thicknesses or widths. It is readily apparent, however, that the process of Kojima is not limited to the processing of a single plate. Continuous automatic processing suggests preparing a plurality of

plates. Further, Kojima does not limit the particular dimensions of the support in any way. Consequently, it would have been obvious to one of ordinary skill in the art to utilize the process of Kojima to continuously and automatically process a plurality of individual supports, those supports having thicknesses and widths suitable for different applications in the lithographic printing art. One of ordinary skill would have been motivated to do so by the desire and expectation of efficiently producing a plurality of high quality plates suitable for different lithographic printing applications.

While Kojima teaches drying the photosensitive coating solution, the reference does not explicitly teach that the photosensitive solution is dry-to-touch. Kojima does, however, describe that, between drying and imaging, the photosensitive coating solution is contact exposed to radiation through a transparent positive film [c. 10, ll. 11 - 12]. Drying the photosensitive coating solution so that it is dry-to-touch before application of the transparent positive film would have been obvious to one of ordinary skill in the art to avoid undesirable sticking of the film and to facilitate removal of the film.

Kojima does not explicitly teach that the second heating take place downstream of the first heating. Mizuno teaches that, in a process for the preparation of lithographic printing plates in a continuous, automatic fashion, the plates are carried sequentially from one processing station to the next [c. 12, ll. 59 - 68]. Based on this teaching, it would have been obvious to one of ordinary skill in the art to provide the second heating means downstream (i.e., sequentially after) the first heating means, as doing so would have been an obvious way of arranging the heating means in a continuous, automatic process.

---

[1] *Hawley's Condensed Chemical Dictionary, 12th Edition*, © 1993 by Van Nostrand Reinhold, p. 1075. See

Kojima does not explicitly teach "changing a condition of heating of the supports and the photosensitive coated layers by the second heating means in accordance with the thicknesses or widths of the substrates." Kojima does teach that post exposure heating may be achieved by a variety of means including IR heaters, panel heaters, and hot-air heaters [c. 10, ll. 55 - 68]. As noted above, based on the teaching of Glover, heating of both the support and the film would have been obvious to one of ordinary skill in the art. Further, it would have been obvious to arrange the heating means in such a fashion as to sufficiently heat the support and the coating, while not being unduly wasteful of energy. For example, in a second heating means containing a bank of IR lamps, it would have been obvious to one of ordinary skill in the art to operate only those lamps directly opposite the coated support and not those opposite an area into which the coated support, by virtue of its width, does not extend. Also, less energy is required to heat a thinner substrate than a thicker one and it would have been obvious to operate the heating means at a lower power setting for a thinner support, thereby avoiding damage to the support.

Consequently, it would have been obvious to one of ordinary skill in the art to modify the process of Kojima so as to control the condition of heating of the second heating means, in the manner described above. One of ordinary skill would have been motivated to do so by the desire and expectation of efficiently heating the support and the coating, while not being unduly wasteful of energy or damaging the support.

With respect to claim 13, Kojima explicitly teaches, with respect to the post exposure, "...arranging a plurality of heating means is preferred..." [c. 10, ll. 59 - 68].

---

especially the quote by Wolfgang Ostwald, bridging cc. 1 and 2.

With respect to claim 18, Kojima does not teach the temperature of the first heating means. The temperature to which the coating is heated is a result-effective variable. If the temperature is too high, the coating may degrade and become unusable. If the coating temperature is too low, the coating may not dry sufficiently, thereby rendering it unusable for further processing. Absent a clear and convincing showing of unexpected results demonstrating the criticality of the claimed temperature range, it would have been obvious to one of ordinary skill in the art to optimize such a result effective variable through routine experimentation. Further, differences in temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such temperature is critical [see MPEP § 2144.05(II)(A)].

With respect to claim 19, Kojima does not specifically teach the amount of organic solvent remaining in the coating layer after leaving the first drying means. The amount of remaining solvent is a result-effective variable. If the amount of organic solvent remaining is too great, the coating material will not be dry enough to facilitate further processing. Absent clear and convincing showing of unexpected results demonstrating the criticality of the claimed amount of residual solvent, it would have been obvious to one of ordinary skill in the art to determine the amount of solvent remaining in the coating layer after the hot air drying process by routine experimentation, thereby limiting the amount of solvent remaining so that the coating layer is dry enough to facilitate further processing.

With respect to claim 20, as noted above, Kojima teaches the use of IR heat [c. 10, ll. 55 - 58]. It is the examiner's position that, absent evidence to the contrary, IR heat reads on "radiated heat."

With respect to claim 21, none of the cited references teach utilizing an induction heater as the second heating means. The heating means for applicant's claimed process does not appear to be critical. It is commonly known to utilize induction heaters in heating processes. Consequently, it would have been obvious to one of ordinary skill in the art to utilize an induction heater to heat the coating in view of the knowledge that induction heaters are useful in heating processes.

With respect to claim 22, Kojima does not explicitly teach controlling the temperature of the second heating means in the fashion provided. The temperature of the second heating means, however, is directly related to the particular coating composition. For instance, certain coating compositions may degrade at too high a temperature. Other coatings, containing large amounts of solvent, may require higher temperatures to achieve a desired degree of curing. Knowledge and control of temperature parameters would have been well-within the purview of one of ordinary skill in the art and it would have been readily obvious to control the temperature of the heating means relative to a particular coating composition in order to achieve a desired finished product.

With respect to claim 24, as noted above, Kojima teaches the use of IR heat [c. 10, ll. 55 - 58]. Kojima does not explicitly teach the use of mid- or far-infrared radiation, but it is the examiner's position that selection of appropriate IR wavelengths would have been obvious to one of ordinary skill in the art in order to achieve the desired degree and efficiency of drying.

Further, Glover teaches non-contact drying of a support coated with a photosensitive layer in which the coated support is heated from one or both sides (i.e. top and bottom) by IR radiation [c. 3, ll. 9 - 40].

It would have been obvious to one of ordinary skill in the art to modify the process of Kojima so as to dry the photosensitive layer utilizing IR radiation from both sides. One of ordinary skill in the art would have been motivated to do so by the desire and expectation of the similar or improved results suggested by Glover: that the photosensitive coating is cured.

6. **Claim 25** is rejected under 35 U.S.C. § is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kojima et al. (US 5,380,612; hereinafter "Kojima") in view of Mizuno (US 5,058,500) and Glover et al. (US 5,323,546; hereinafter "Glover"), as applied to claim 12 above, in further view of Gandini et al. (US 6,270,938; hereinafter "Gandini").

The combined teaching of Kojima, Mizuno, and Glover is detailed above. None of these references teach including an overcoat layer on the photosensitive coating. However, Gandini teaches that the additional application of an overcoat layer is advantageous [c. 10, ll. 44 - 47].

It would have been obvious to one of ordinary skill in the art, in the absence of a teaching by Kojima, Mizuno, and Glover as to further treating the coated support after the drying process,

to look to prior art for additional treatments and to utilize the teachings of Gandini that an additional application of an overcoat is advantageous.

VII. Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William P. Fletcher III whose telephone number is (703) 308-7956. The examiner can normally be reached on Monday through Friday, 9 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P. Beck can be reached on (703) 308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

William Phillip Fletcher III
Patent Examiner
United States Patent & Trademark Office
Group Art Unit 1762

wpf
May 14, 2003

SHRIVE P. BECK
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700